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SUBJECT: Amendment After Final

Serial No.: U.S. Patent Application 09/975,006, filed October 10, 2001

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# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:  
Aschenbeck et al.  
Serial No.: 09/975,006  
Confirmation No. 8542  
Filed: October 10, 2001

Group Art Unit: 1772

Examiner: W. Watkins III

For: Roofing Materials Having Engineered Coatings)

## RESPONSE TO FINAL ACTION

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In response to the final Office Action mailed March 16, 2004, please consider the following remarks. Favorable reconsideration of the application is respectfully requested.

Claims 8-10, 53 and 55 were rejected under 35 U.S.C. 103(a) as being obvious over Miller et al. (WO 00/40794) in view of Vermilion et al. (U.S. 5,494,728). Miller et al. discloses a roofing material including a substrate coated with an asphalt coating. The asphalt coating includes an upper region 76 above the substrate, and a lower region 78 below the substrate. There is no suggestion that the upper region of the coating has improved weathering performance compared to the lower region. A protective coating 70 is adhered to the upper surface of the upper region of the asphalt coating. The protective coating is described as being distinct from the asphalt coating, not as being an upper portion of the asphalt coating. The protective coating is typically a polymeric adhesive, but it can also be an "asphalt-based polymeric material".

The rejected claims define a "top portion" of an asphalt-based coating as being that portion which covers the top of the mat (as opposed to a "mat portion" saturating the mat and a "bottom portion" covering the bottom of the mat). The top portion includes a "top surface layer" (i.e., the top surface layer is that part of the top portion which is on the top surface of the roofing material). This is illustrated in Fig. 2, where the top portion 24A of the coating includes a top surface layer 24T. The claims further state that the coating (including the top

portion) includes asphalt and about 30-75% filler. The percentage of filler along with the asphalt indicates that the coating is a typical asphalt-based roofing material coating.

In contrast, Miller et al. adheres a layer of protective coating 70 on top of the typical asphalt-based coating (i.e., on top of the upper region 76 of the asphalt coating). The purpose of the protective coating is to cause greater adhesion of the roofing granules so that they do not come loose from the roofing material when hit by hailstones. At page 18, lines 12-30, a granule adhesion test is described in which the shingles are first subjected to 60 days of alternating solar radiation and water spray and then subjected to an impact. However, the test is for granule adhesion, not for improved weatherability. The protective coating is typically a hot melt polymeric adhesive. There is no suggestion in Miller et al. to add a filler to the protective coating, particularly not from about 30% to about 75% filler.

Vermilion et al. was cited as disclosing an asphalt roofing coating containing 65% filler. The Examiner stated that it would have been obvious to add 65% filler to the protective coating of Miller et al. in order to have normal performance of the coating because of the teachings of Vermilion that this is an accepted value. Applicants respectfully disagree. The addition of a filler to the protective coating would reduce the adhesive properties of the coating. This would be contrary to the purpose of using the protective coating, which is to improve granule adhesion.

In response to Applicants' previous remarks, the Examiner stated that the instant claim language is open and does not exclude the top portion from having an upper layer that is a top coating that may differ in composition. Applicants respectfully submit that this is beside the point. The claims require the top portion of the coating to contain asphalt and 30-75% filler, and they include at least the top surface layer of the top portion to pass a specific weathering performance test (in addition to containing asphalt and 30-75% filler). The upper region 76 of the asphalt coating in Miller et al. includes a conventional amount of filler, but there is no suggestion that it would pass the weathering performance test, or that it has improved weatherability compared to the lower region 78. The protective coating 70 adhered to the upper surface of the upper region 76 does not contain filler, and the addition of 30-75% filler would reduce its adhesive properties, contrary to the purpose of the invention. Shingles with the protective coating are disclosed as passing a granule adhesion test, but Miller et al. does not disclose whether the protective coating would pass the weathering performance test. In view of the above, it is respectfully submitted that the claims are not obvious over Miller et al. in view of Vermilion et al.

It is submitted that dependent claims 10 and 55 are further distinguishable from Miller et al. These claims state that the entire top portion of the coating passes the weathering performance test (as opposed to just the top surface layer of the top portion passing the test). In responding to the Applicants' previous remarks, the Examiner stated that the "entire top portion" of the coating could mean the entire top surface of the top portion. Applicants respectfully disagree that the claim language could be interpreted in such a manner. The claim language itself defines the "top portion" of the coating as being that portion which covers the top of the mat, the "mat portion" as being that portion which saturates the mat, and the "bottom portion" as being that portion which covers the bottom of the mat. Independent claims 8 and 53 state that at least the top surface layer of the top portion passes a weathering performance test. In addition to the specific claim language, this is all described in the specification at page 12, lines 3-12 and shown in Fig. 2. Dependent claims 10 and 55 state that the entire top portion of the coating passes the weathering test. When read in view of the independent claims, this claim language necessarily means that not just the top surface layer of the top portion passes the weathering test, but the entire top portion passes the test, where "top portion" has been defined in the claim language as that portion of the coating that covers the top of the mat. It would be inconsistent with the clear claim language to interpret "entire top portion" to mean just the entire top surface layer of the top portion. In contrast to claims 10 and 55, Miller et al. only apply a layer of the protective coating on the top surface of the asphalt coating. The protective coating does not extend down to the mat. Miller et al. would have no motivation to extend the protective coating down to the mat, because the purpose of the protective coating is to more strongly adhere the roofing granules to the top surface so that they do not come loose when hit by hailstones. Extending the protective coating down to the mat would be unnecessary, and it would increase the cost of the roofing material.

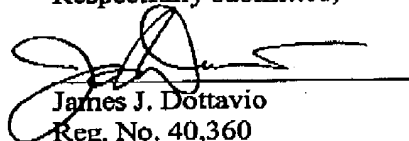
Claims 8-10, 53 and 55 were also rejected under 35 U.S.C. 103(a) as being unpatentable over Schult (U.S. 4,911,975). Schult discloses a roof covering including a support layer 1 which can be a nonwoven fiber mat. The roof covering also includes a cover layer 4 of a light-colored material on the upper side of the support layer. The light-colored material is capable of highly reflecting incident solar radiation so that the life of the roof covering is increased without the inclusion of a gravel covering. The cover layer is preferably a polyolefin (polyethylene or polypropylene) to which light-colored or white pigments are added. In the best mode embodiment, the cover layer contains 50% polyolefin, 45% glass meal (filler), and 5% pigment (e.g., titanium). In another less preferred embodiment, 5% bitumen is added to lower the cost, so that the cover layer contains 45%

polyolefin, 45% glass meal, 5% pigment, and 5% bitumen. The cover layer has a shiny white upper surface 6. The roof covering also includes a lower sealing layer 2 having a black color. The sealing layer contains bitumen, polymer and filler (e.g., 40-60% bitumen, 15-50% polyolefin and 10-20% shale meal).

The rejected claims require an asphalt-based coating on the top portion of the roofing material. The Examiner stated that Schult discloses a "bitumen based" cover layer 4. Applicants respectfully submit that the Schult cover layer cannot be fairly characterized as "bitumen based" or "asphalt-based". At most, the cover layer contains 5% bitumen added to lower the cost. In the best mode embodiment, the cover layer does not contain any bitumen. Even if a small amount of bitumen is added, the cover layer must retain its light color in order to be effective in reflecting solar radiation. Too much added bitumen would impart a dark color to the cover layer, contrary to the purpose of the invention. The cover layer contains primarily polyolefin, in addition to pigment and filler, in order to produce the required light color and shiny upper surface. In the disclosed embodiments, the cover layer contains 50% polyolefin/0% bitumen and 45% polyolefin/5% bitumen. The cover layer is clearly polyolefin-based, not bitumen-based. Therefore, it is respectfully submitted that the rejected claims are not obvious in view of the Schult patent.

If any questions should arise with respect to the remarks, or if it would in any way expedite the prosecution of this case, it is requested that the Examiner contact Applicants' attorney at the number listed below. If any fees are due in connection with the filing of this response, including any fee for a required extension of time under 37 CFR 1.136(a) for which Applicant hereby petitions, please charge all necessary fees to deposit account no. 50-0568.

Respectfully submitted,



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